Simple algorithm to assess the diversity and distribution for algae of Iran

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By studying algae reports from different localities of the country during the past 87 years, about 6000 records information including 2567 species and infra-specifics were analyzed and distribution maps were drawn. The algae studies in the Iranian islands of the Persian Gulf, especially around Bushehr and the Khark Island by Borgesen (1930), the oldest available document is used in this study. Many of the scientific names of the references used were synonyms with authorities in the field of algae taxonomy, such as AlgaeBase (Guiry & Guiry 2015) were changed to valid names.

Using the capabilities VB.Net programming (Foxall 2015) under a model of software named as "Explorer for Algae of Iran" was designed and developed. The main targets of this study and making utilities and technical options related to the three essential questions are as follows:

1. How can plot distribution maps for selected algae species?

2. How can view the geographic coordinates of the points in DMS by moving the cursor on the map and related list of species and documented information for selected area?

3. How can the taxa levels such as genus, species, subspecies, varieties, and forms in search mode could be computed simultaneously?

This software package designed to provide all these cases where its general view is shown in Fig. 1. In addition, a list references and a search engine are provided in this algorithm. To show more data, a special version of software for information represented by the letters A to C of those scientific names (about 687 taxa) is provided which can be downloaded via: https://drive.google.com/file/d/0Bx_0u3VbcpmOMjBoM19nbmpnUFU/view?usp=sharing

On the other hand, exploring and numerical analysis of taxa on the map is also very important. For example, processing of exploring Qeshm Island which is shown in Fig. 2. It seems that, such user friendly digital structure has an effective role for biodiversity studies of algae. Moreover, giving the importance of localization of technical knowledge to investigate the diversity and distribution of these algorithms can also benefit other living organisms in Iran.